

Statistics 6860 Bayesian Statistics

Quiz 2

1. Suppose that we select items independently from a production process until a Defective one is selected. What is the likelihood you would use to model the number of items tested before the first Defective is selected?
2. What is a reasonable (conjugate) prior for the proportion of Defective items in the production process? What is a reasonable reference (noninformative) prior for this likelihood?
3. Suppose after observing the items on the production line the 142nd item is Defective. So $X = 142$. Compute a Bayesian estimate of the proportion of Defective items? Give a 95% posterior Bayesian credible interval.
4. Write a WinBUGS program to implement this estimation.